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Mapping the Trading Behavior of the Middle Class in Emerging Markets: Evidence from the Istanbul Stock Exchange

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Abstract

Predicted to grow above 4.9 billion by 2030, with an overall spending capacity of $56 trillion, the rise of the middle class in emerging markets has attracted global practitioner and academic attention. How this new wealth will be invested is a central question; yet our understanding still remains fragmented. Drawing on the literatures of international business, behavioral economics and finance and using high-frequency stock market data, we examine and map the trading behavior of the middle class in Turkey, one of the fastest rising economic powers of the East. We find that middle class traders exhibit discernible differences to professionals, with respect to risk attitudes and stock preferences (e.g. prefer lower-risk, smaller-size and 'value' stocks). In addition, while they typically hold small portfolios, trade too frequently and tend to realize lower gains than professionals, their role has become considerably influential to the direction of the entire market.

1. Introduction

> *«Thus it is manifest that the best political community is formed by citizens of the middle class, and that those states are likely to be well-administered in which the middle class is large, and stronger if possible than both the other classes, or at any rate than either singly; for the addition of the middle class turns the scale, and prevents either of the extremes from being dominant.»*
>
> *Aristotle, Politics, IV 1294b35, trans. Jowett*

The role of the middle class in society has been well acknowledged since the early classical years. The Greek philosopher Aristotle (3rd century BC) firmly believed that for a well-functioning society, a strong, powerful middle class is essential. He argued that a class, which stands between the rich and the poor, the oligarchy and democracy, will be more stable, serving the interests of both sides. Indeed nowadays, the middle class[1] is associated with economic development and progress, by fostering entrepreneurship, innovation and investment (Banerjee & Duflo, 2008), increasing consumer demand (Kharas, 2010), and encouraging policy reforms, institutional changes and public investments conducive to growth (Ravallion, 2010). In fact, countries with a larger middle class tend to enjoy more rapid progress against poverty.

However, more and more evidence comes to light regarding the constant shrinking of the middle class in the developed countries (Pressman, 2007; Scott & Pressman, 2011). In the United States for example, the gap between the poor and the very rich has kept on widening since the early 1980s; nowadays one percent of the economy earns more than 23 percent of the national income. Since the poor receive only a small part of the economic pie, it is clear that the middle-class has suffered the most (Scott & Pressman, 2011, p. 333). It is therefore easy to distill why a lot of attention has recently been placed on the emerging markets around the world, and particularly on their rapidly rising *middle classes*. With just four of these economies - China, India, Indonesia and Brazil - covering 42.61 percent of the global population, the potential power shared across

[1] Theoretically middle class is the stratum in society between the rich and the poor. Practically, defining middle class has been extremely precarious in the literature, especially when comparing nations at different levels of economic development and national poverty lines. In fact, what makes for the cut-off point in the poverty lines in the developed world, can be classified as the middle or even the upper middle class in other countries around the world, e.g. India, Africa (Banerjee & Duflo, 2008; Birdshall, 2010; Ravallion, 2010). In relative terms, middle class is identified by diving the households within a specific market according to their comparative income generation (Birdstall, 2010) or their consumption distribution (Banerjee & Duflo, 2008). In these terms, a middle class household would be positioned somewhere between the 20th and 90th percentile of the income or the consumption distribution.

these markets is simply unprecedented. Even a small increase in the size of their middle classes is deemed to have a knock-on effect not only on the economic growth of their respective regions (Easterly, 2001), but also on the global consumer and trade markets (Murphy, Shleifer, & Vishny, 1989).

To fully appreciate the role of the newly-formed middle classes in the global marketplace, it is pertinent to establish a good understanding of their behavior as economic actors within (Bourdieu, 1984). To this end, much attention has been paid on mapping the behavior of the rising middle classes as consumers, by examining cultural characteristics, consuming patterns, tastes and lifestyle choices (Banerjee & Duflo, 2008; Farell, et al., 2008; Kravets and Sandikci, 2014). However, uneven attention has been given to the investment behavior of the middle class, particularly with respect to the capital accumulation process of marketable intangibles, such as stocks, bonds and other tradable assets. In the current study, we try to bridge this gap in the literature by examining the behavior of the middle class traders in emerging markets. Our objective is to *map their trading patterns and contribute towards a theory on the risk attitudes and trading performance of the middle class in these countries*.

As an emerging economy grows and more households enter the middle-income tier, there's an increasing demand for savings and investment alternatives that will allow those households to achieve their required consumption patterns and maximize their utility functions. Yet, with the steep rise in housing prices and under conditions of low inflation-adjusted interest rates, often evidenced across emerging economies, more and more households turn to investments in capital and commodities markets, most notably equities and gold (World Gold Council, 2014). After all, whilst investing in stocks is risky, it is inarguably a means to increase one's wealth in the long run, as well as to diversify a heavily undiversified investment portfolio, usually comprising exclusively of property.

We take a multidisciplinary approach: drawing on the literatures of international business and behavioral economics, and using a finance research methodology, we shed light in this relatively under-examined issue. We specifically investigate the trading habits of middle class investors in an emerging market, focusing on Turkey, one of the fastest rising economic powers of the East.

In particular, we investigate the behavior of middle class (retail) traders in the Istanbul Stock Exchange.

Using daily 'tick-by-tick'[2] data of approximately 9.1 million trades in the stocks of the BIST-30 Index over a six-month period, we split the trades into those by middle class investors and those by market professionals. To proxy for the middle class group we assume that the majority of small trades -as analogically defined in Barber et al. (2009)- are initiated by middle class market participants and large trades by professional investors. As such, we portray the typical middle class trader and reveal their risk attitudes and preferences with regards to firm capitalization and other characteristics. We also offer insights on the impact of middle class trading activity on market movements.

The remaining of the paper is structured as follows: Section 2 presents the key theoretical and institutional background of the study. In section 3, we describe the data and the methodology employed. Next, we present the empirical results, which are subsequently discussed in the following section. Finally, we draw further conclusions and offer recommendations for future research and practical implications.

2. Literature and Background

2.1. The Size and Economic Behavior of the Middle Class in Emerging Markets

According to the OECD Development Centre report in 2010, the global middle class is expected to increase from 1.8 billion to 3.2 billion by 2020 and to 4.9 billion by 2030 (Kharas, 2010, p. 27), with the vast majority of this rise (almost 85 percent) attributed to Asia. Although half of the increase is attributed to China alone (Farrell, et al., 2006; Kharas, 2010; Ravallion, 2010), many countries are also closely monitored for their contribution. Along with the estimation of the size of these unchartered markets, comes the realization of their growing purchasing power. McKinsey estimates that by 2025, China's lower middle class alone will comprise more than 520

[2] Tick data refers to any high frequency market data, which shows the price and volume of every single transaction between a buyer and a seller for every stock.

million people with a total disposable income of approximately $1.6 trillion (Farrell, et al., 2006). When these figures are combined globally, it is estimated that by 2030, global middle class spending will skyrocket to $56 trillion (from $21 trillion in 2009), which could even "offset the stagnant purchasing power most analysts see as likely in the developed world" (Kharas, 2010, p. 28). How this money will be allocated and the general financial behavior of its proprietors are undoubtedly critical questions.

International business and marketing scholars have been particularly interested in the distinct consumption patterns of the rising middle classes. After all, being considered as "the most conspicuous aspect of class behavior" (Raynor 1969, p. 69), consumption patterns have widely been used to classify people in different status groups (Mason, 1983; Corneo & Jeanne, 1997; Kravets & Sandikci, 2014; Vigneron & Johnson, 1999; Veblen 2007). A clear divergence between the middle class and the poor with respect to their attitude towards consumption, entertainment, education, health care and so on is in fact well documented. (Banerjee & Duflo, 2008; Farrell, et al., 2006; Kharas, 2010). Consequently, consumer tastes and living styles have become status symbols, denoting the differentiation among classes, and providing a way for people to recognize their position and that of others within a certain class.

Despite the rich literature on consumption patterns, our understanding of the economic behavior of the newly-formed middle class remains partial; according to Bourdieu (1986) the middle class is distinguished by the accumulation of economic, cultural and social capital. The economic capital, in particular, incorporates all property rights from knowledge to marketable tangibles, such as consumer goods and services, and marketable intangibles, such as credit, goodwill, brand names, trademarks, stocks, bonds and other tradable assets that can be easily transformed into money. To map the economic behavior of the middle classes, we therefore also need to identify how they are accumulating marketable intangibles, for instance how they behave as investors. Unfortunately, so far there has been limited focus on the investment behavior of the new middle class in emerging markets. To this front, mostly real estate and commodities have been studied as choices of middle class investment (Goyal & Sharma, 2014; World Gold Council, 2014).

2.2. Turkey as an Emerging Market

Modern day Turkey is a relatively young economy and yet one of the most rapidly growing emerging markets. With a GDP per capita growth of approximately 60 percent within less than a decade (from $11,394 in 2005 to $18,114 in 2013[3]), and a constantly growing population of 75 million, Turkey is ranked as the 17th largest economy in the world, and the 9th largest among the emerging ones[4]. Turkey also ranks among the Emerging and Growth-Leading Economies[5], which are expected to be larger than the average of the G7 ones in the next ten years. Being such a growing economy, Turkey presents with a dynamic ten billion dollar consumer base, which consists mainly of young consumers with substantially increasing income levels (Cavusgil, et al., 2003; Tatoglu & Glaister, 1998a, 1998b). It is therefore not surprising that foreign direct investment increased from a mere $35 million in 1980 to $12 billion in 2013 (OECD 2013).

2.2.1. The Istanbul Stock Exchange

The Istanbul Stock Exchange (ISE) is a particularly attractive capital market, due to its dynamism and special regulatory regime, which provide investors with a platform that is free of restrictions and post-liberalization effects (Ülkü & İkizlerli, 2012). The establishment of the ISE in 1986 was instrumental to the economic development of Turkey. Being the sole corporation in Turkey for securities exchange, the ISE became "essentially the main capital market institution" (Diyarbakirlioglu, 2011, p. 488). Recently the ISE merged with the derivatives and commodities exchanges under one rebranded market, the 'Borsa Istanbul' (BIST).

Trades in the ISE are executed automatically, following a "Multiple Price - Continuous Auction" electronic system, based on the price and time priority rule. The trading mechanism requires a member firm to act as a market maker, providing continuous two-sided quotes (price and amount) and maintaining spreads. For some securities, a single price auction is also run. Trades are executed in two sessions; one in the morning and one in the afternoon, with opening sessions

[3] Country statistical profiles: Key tables, OECD 2013 - ISSN 2075-2288
[4] Gross Domestic Product 2012, Purchasing Power Parity, World Bank Group
[5] Upper middle income Gross National Income (GNI) countries with advanced market infrastructures or high income GNI countries with lesser developed market infrastructures

at the beginning of each. Members collect orders from their clients / investors electronically and transmit them to the trading system via remote access using electronic messaging interfaces. Member representatives may also enter buyers' and sellers' orders to the Electronic Trading System via terminals located on the floor and the members' office[6].

Being a relatively novel institution and to further strengthen its competitive positioning among the global capital markets, the ISE introduced early on new regulations and tax exemptions, encouraging foreign and domestic investment (Diyarbakirlioglu, 2011). Following a series of regulatory reforms, mostly encouraged by foreign investment interests after 2001, both foreign and domestic investments rapidly returned to the ISE. In fact, according to Ülkü and İkizlerli (2012) the trading volume by foreign investors climbed from just 6 percent in the early '90s to 27 percent in 2007, although it stabilized at around 20 percent in 2010. At the same time, the market capitalization of foreign investors rose from 45 percent to 70 percent and stabilized at around 65 percent in 2010. Meanwhile, the market capitalization of domestic individual investors stabilized at around 20 percent, yet their trading volume increased to 68 percent, effectively dominating all others. Overall since the 1990s, and despite the setbacks, the ISE has generally experienced remarkable growth, developing into one of the world's fastest growing stock exchanges. In fact, the ISE is today the seventh largest emerging country stock exchange (Ülkü & İkizlerli, 2012).

2.3. Middle Class Trading Patterns

Evidence from equities markets in developed countries suggests that a distinctive relationship exists between individually and institutionally motivated order flow and returns. In general, the finance literature favors professional traders over individuals (often identified as those who invest via small to middle-level trades), by reporting that the former gain relatively higher returns, as they are generally better informed. For example, Odean (1999) showed that stocks bought by individual investors underperformed stocks by professional investors by as much as 23 basis points, while Barber and Odean (2000) found self-managed portfolios of individual

[6] ISE guidebook for Investors: http://borsaistanbul.com/data/kilavuzlar/Borsa_Istanbul_For_Investors.pdf

investors to underperform the market. Barber, Odean and Zhu (2009) showed that order imbalances of individual traders are highly correlated and indicative of 'herding'. Shleifer and Summers (1990) suggested that individual investors herd in response to analyst recommendations or forecasts and place excessive importance on recent news. Also, as noted by Lakonishok, Shleifer, and Vishny (1992) institutional herding might arise because institutional investors are better informed than individuals. Finally, Nofsinger and Sias (1999) showed that although herding activity is undertaken by individual investors, their actions have less price impact than herding by institutions.

Another feature of individual trading behavior is also widely believed to be trading on past performance, especially prevalent among middle class portfolios. To this front, Lakonishok, et al. (1992) showed that investors engage in positive feedback buying past winners, while Shefrin and Statman (1985), supported that individual investors have the disposition "to sell past winners early and ride losers for too long". Kumar and Lee (2006) used trading records of individual investors to show that buying activity in one stock is positively correlated with buying activity in another, so that the trades of individuals are systematically correlated.

Barber and Odean (2000), examined a unique dataset of approximately 66,000 US households with investment accounts at a discount broker. They reported that the median household portfolio comprised just 2.6 stocks, was worth $16,210 and was turned over by more than 75 percent annually. This trading pattern resulted in underperformance, attributed mainly to the cost and the frequency of trading, rather than to the portfolio choices themselves. The study concluded that the cause behind this excessive trading is overconfidence, coupled with the joy and excitement of trading, which hints to elements of gambling and sensation-seeking behavior.

Similar, though not always identical, patterns have been observed in emerging markets: for example Chen, Kim, Nofsinger and Rui (2007) found Chinese individual investors to appear overconfident and generally prone to investment biases, such as the above-documented "disposition effect" and the "representativeness bias", and to overall make poor investment decisions. In general, according to Barber and Odean's (2011) recent review of the global empirical literature on the topic, individual investors trade more than frequently, sell winners and

hold on to losers. Their portfolios are mostly under-diversified, while their trading behavior is easily influenced by the media and their own past experience, widely ignoring general prescriptions on equity trading (Barber and Odean, 2011).

2.3.1. Trading Patterns in the ISE

A small number of studies inform the literature on the behavior and trading patterns in the ISE, without however making clear distinctions between middle-class and affluent investors, while the main focus has been on the behavior of the professional foreign investors. For instance, Ülkü (2012), using broker-level data, confirmed that 'big player' trades in the ISE are positively associated with market returns and exhibit elements of herding behavior and positive feedback trading. In another study, Ülkü and Ikizerli (2012) examined the patterns of foreign trade inflows in the ISE and found them to forecast market level returns, while foreign traders were found to negative-feedback trade, especially during turbulent periods, and to be relatively well-informed. In another recent study, based on the observation of four big brokerage houses in Istanbul, Tarim (2010) highlighted some extremely useful conclusions on the behavioral patterns of domestic individual investors in the ISE. On average, domestic individuals were found to be very short-termist, turning over their portfolios every 28 days (versus 322 for foreign investors) and very sensitive (quite irrationally) to the arrival of global news. Meanwhile, they were also seen to have become more risk-averse and suspicious of the stock market's utility as a long-term investment venue, while they were typically reported to prefer flow-and-momentum trades in large capitalization stocks.

3. Data and Methodology

3.1. The Middle Class Investor in the ISE

According to the Turkish Capital Markets Association (*Merkezi Kayıt Kuruluşu,* henceforth MKK), as of the end of 2013 there were approximately 1.1 million equity investor accounts in the ISE, of which 1.09 million belonged to domestic individuals. In Table 1, we present

summary statistics and the distribution of the investors in the ISE, by several break-downs. Data for this section were retrieved from the databank of the MKK (www.mkk.com.tr), and are available to the public. It becomes clear from Panel A, that domestic individual investors dominate the market in terms of numbers. Collectively they account for 98.6 percent of the investors in the ISE, with the domestic professionals and the foreign investors, only accounting for the remaining 1.4 percent. However, the picture is inverted when it comes to the market value of the investment holdings. Collectively, domestic individuals own approximately TL37 billion[7] ($17.2 bn), just 18.9 percent of the entire market value of the free float, while foreign investors (professionals and individuals) own approximately TL122 billion ($56.7 bn), or just below 63 percent. Based on these figures, the mean value of a domestic investor's portfolio is TL33,740 ($15,680), versus TL33.76 million ($16.7 mil) for foreign professionals.

However, not all individual investors are categorized as 'middle class', as clearly shown in Panel B, which gives a break-down of the above investors per portfolio size. We thus observe that, while a staggering 80.5 percent of the domestic investors hold portfolios between TL1-10,000 ($0.5 - 4,650) and TL10,000 - 50,000 ($4,650 –23,240) and therefore could be categorized as middle class, a very small portion (≈3.4 percent) of investors holds portfolios larger than TL100,000 ($46,500) but effectively controls around 82 percent (≈TL30 bn/ $13.9 bn) of the market capitalization of domestic individuals[8]. Excluding those large portfolios and all the inactive accounts from the analysis, so as to focus on the above middle class portfolios, yields a weighted average portfolio size of TL4,811 ($2,235) distributed among 881,312 domestic individual investors, and adding up to TL4.24 bn ($1.97 bn) in total.

As regards the regional distribution of the middle class investors, Panel C confirms that they are unsurprisingly concentrated in the large urban areas of the country, with an astounding 61.5 percent based in Istanbul and another 15 percent jointly in Ankara and Izmir. So, in total three out of four individual investors reside in the three largest urban areas, which in turn are home to around a third of the entire population country. This affirms our expectations that middle class

[7] $/TL = 2.1518 at 31/12/2013

[8] These large portfolios, belonging to a 'select few', consist of course of quite idiosyncratic characteristics and therefore fall outside the scope of our study.

investors in Turkey would concentrate around the large cities, close to the financial and business center and the core of the investment brokerage activity, as also observed by Tarim (2010).

[Insert Table 1 here]

Similarly interesting is the break-down of the domestic investors by age group and portfolio size, as presented in Figure 1. Here, we also make a number of noteworthy observations: In terms of size, the age group 40 -45 dominates the investor's population (15.6 percent) with a total size of around 170,000. With the addition of the age group 45-49, the entire fifth decade (40 – 49) exceeds 329.000, or simply 30.1 percent of the population. The addition of the previous decade (30-39) yields another 250,000 investors (22.7 percent), hence jointly the two age groups spanning the fourth and fifth decades (30-49) account for 52.7 percent of the active domestic investors in the ISE. With respect to the middle class segment (portfolios between TL1-50,000 ≈$0.5 - 23,240), the most active age appears to be between 20-25, with 10,283 (or 89 percent of the group) holding portfolios within this bracket. On the other hand, the most affluent age group appears to be the one over 75 years, with 29,963 individuals (or 78 percent) holding middle class portfolios (TL1 – 50,000) and 2,160 investors (or 6 percent of the age group) holding portfolios greater than TL100,000 ($46,500).

[Insert Fig. 1 here]

3.2. Trading Data from the BIST- 30 Index.

To draw further inferences on the trading patterns of the middle class investors in the ISE, it is necessary to examine higher-frequency data. Such data will enable us to better map how middle class traders behave in general on a daily basis and how they react to market movements and external stimuli. Hence, we draw a sample of 30 ordinary common stocks listed on the BIST-30 index between the period July 2013 - December 2013. The BIST-30 is a broad-based, free-float, capitalization-weighted index of 30 high capitalization and liquidity stocks, accounting for 70 percent of Turkey's market value and volume. We choose to employ the BIST-30 because its constituents are the 'Blue Chips' of the market, the most liquid and transparent companies, therefore the most representative sample of the Turkish industry.

The chosen period is also very interesting and suitable for the purposes of the study: During the second half of 2013, the ISE experienced a period of relative instability, mainly led by the 'Taksim Gezi Park' events, which caused the BIST-30 to drop from its all-time high of 115,341 units (22 May) to 79,952 (on 27 August). Although some of these losses were recouped in the following period, and the index returned to 98,735 units by mid-September, the market went under further pressure when the protests re-ignited during the fall across Turkey, especially after the breakout of a corruption scandal in early December, involving government officials and affiliates in alleged bribery, corruption and fraud. These events put further pressure to the Turkish currency and caused foreign investors to review their positions in the ISE, resulting in net foreign outflow of $418 million for the year (*source: MKK*). These market conditions during this period provide an ideal context to observe trading behavior and trading patterns. Figure 2 illustrates the BIST-30 Index during the period of the study alongside the trading volume.

[Insert Fig. 2 here]

From Bloomberg, we collect 'tick-by-tick' transaction data (price and volume) for all 30 stocks during the six-month period. The number of trades varies by each day and firm, as shown in Table 2. The average number of trades each day is 2,922 per stock; the minimum being 825 (for the ticker DOHOL, an industrial conglomerate) and the maximum 8,295 (for the ticker GARAN, the second largest private bank in Turkey). The total number of trades for all 30 stocks for the period exceeds 9.1 million, with the lowest number per stock being 84,944 and the highest 895,808.

[Insert Table 2 here]

We also retrieve from Bloomberg the daily returns of the 30 stocks, the value-weighted returns of the market and the risk-free rate of the market. We calculate Volatility as the standard deviation, and the Beta of each stock with the Capital Asset Pricing Model (CAPM), using the last 100 days. Size is calculated as the market capitalization and Analyst is the number of analysts following of each firm. Market-to-book (M/B) ratio is the ratio of market equity to book value of equity.

3.2.1. Proxying for Middle Class Trades.

A generally accepted metric to classify the identity of each transaction is based on tick-by-tick bid and ask transactions, such as those provided for US firms by the TAQ and ISSM, or TORQ databases. However, for an emerging market such as Turkey, information on such levels of market depth was simply unobtainable. To overcome this obstacle, we put forward an alternative research design, based on stock market microstructure and our existing knowledge on the economic behavior of the middle class.

In specific, we posit that the population below the poverty line is extremely unlikely to participate in the stock markets. Having survival as a first priority and no disposable income, while they often do not even meet basic eligibility criteria (bank account, credit history) the poor in any society show no interest in stock market investment. At the other end of the spectrum, the wealthy are very likely to engage in a range of investing activities, including stock market trading. However, in this case, they are more likely to employ the services of professional wealth management companies, which offer advice on investments and taxation, alongside financial, insurance and succession planning. The affluent are thus not expected to micro manage their share dealing accounts themselves. It is therefore safe to assume that the vast majority of the participants in a stock exchange will be retail investors from the middle class (MC). Along with market professionals (PR), who are acting either on behalf of wealthy investors or on account of managed funds, the middle class will account for the vast majority of stock market trades.

To proxy for middle class trades we employ a modified version of the Barber et al., (2008) algorithm, which assigns trades below $5,000 as retail and those above $50,000 as institutional. Trades between $5,000 and $50,000 cannot be classified effectively as either retail or professional traders can initiate them. However, to employ the above algorithm, we need to translate it to the local currency, taking into account the differences between the US and the Turkish economy and the effect of exchange rate and purchasing power fluctuations over time. Hence, we first calculate the percentage of the above cut-offs ($5,000 and $50,000) on the US GDP per capita for 2008, at purchasing power parity (PPP), expressed in constant international

US dollars. Then we multiply the ratios with the Turkish GDP per capita for 2013[9] (again at PPP), to find the equivalent cut-offs for Turkey (in $ US). Finally, we convert each cut-off into the domestic currency, using the mean $/TL exchange rate during the period July-December 2013 as follows:

$$Trading\ Threshold\ (TL) = \frac{US\ Threshold}{US\ GDP\ (PPP):\ 2008} \times (TURKEY\ GDP(PPP):\ 2013) \times (\$/TL)$$

$$MC\_Threshold\ (TL) = \frac{\$\ 5{,}000}{\$\ 50{,}339} \times \$\ 15{,}300 \times 2.0057 \approx TL\ 3{,}048$$

$$PR\_Threshold\ (TL) = \frac{\$50{,}000}{\$50{,}339} \times \$\ 15{,}300 \times 2.0057 \approx TL\ 30{,}480$$

We then calculate the value of each of the 9.1 million trades as Volume of Shares × Price per Share and class them either as Small (Size≤ TL3,048), Big (Size≥TL30,480) or Unclassified (TL3,048 < Size < TL30,480). Along the same lines as in Barber et al. (2008), we posit that, while there will be "small" and "large" trades by both middle class investors and professionals, it is far more likely that middle class traders will make "small" trades. Accordingly, professionals are far more likely to make "large" trades. The "Unclassified" Trades are discarded from the sample as the identity of the traders cannot safely be assumed to belong in any category (middle class or professional). Following this step, we calculate for each stock and for each day in the examined period the Ratio: MC/PR, effectively the daily ratio of Small/Big trades for each of the 30 stocks in the index. Although the MC/PR ratio is by no means an exact metric of middle class trading activity, it can be argued to be a very suitable proxy for the purposes of our study and capable of quantifying the relative trading activity.

Finally, to establish the representativeness of the study sample, in Table 3 we calculate key summary statistics of the BIST-30 and the BIST-100 index constituents. In general, the two samples exhibit similar characteristics. However, BIST-30 firms are slightly larger and more attractive than BIST-100 ones (higher number of analysts following). BIST-30 firms also present slightly lower mean returns (less negative) and volatility, but higher mean market-to-book ratios (consistent with the size and value anomaly, see among others Fama and French (1992)). The

[9] CIA Estimate for 2013: $15,300 (the World Factbook, 2014) https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html

average ratio of the number of Middle Class trades to the number of Professional trades (MC/PR) is around 2.9 and similar across the two groups. This ratio suggests that the middle class trades around 3 times more than professionals, which translates to a 75-25 percent split of the trading activity, somewhat higher than the figures for 2010, as reported by Ülkü and İkizlerli (2012). These findings concur that our sample of BIST-30 firms is representative of the ISE and a fitting choice for the purposes of our study.

[Insert Table 3 here]

4. Empirical Results

In our first approach to investigate the behavior of middle class investors, Table 4 reports the ratio of the number of Middle Class trades to the number of Professional trades (MC/PR) in quintile portfolios constructed based on the following firm specific characteristics: a) Volatility of the returns, b) Beta calculated over one year CAPM, c) Size (market capitalization), d) number of Analysts following, and e) Market-to-Book ratio (M/B).

4.1. Risk Profile of Middle Class Investors

We begin by analyzing the risk profile of the middle class. To do this, we construct five quintile portfolios based on the frequency distributions of the values of Volatility and Beta and then calculate the mean MC/PR ratio for each portfolio. According to the volatility quintile portfolios, more middle class trades are observed on the lower-risk equities. That is, portfolios with smaller volatility have higher MC/PR ratios. Specifically, portfolio '1 Small' volatility presents a mean MC/PR ratio of 2.78, whereas for portfolio '5 Big' volatility the mean MC/PR ratio is only 2.40. The difference DIF (High-Low) -0.386 is statistically significant. Beta is another commonly employed measure of risk, which is however more related to the sensitivity of a stock's returns to the returns of the entire market. However, the results based on Beta, are mixed and therefore inconclusive. This could however be explained by the fact that all stocks in the BIST-30 are constituents of the index and therefore participate in its daily returns.

4.2. Capitalization Preferences of Middle Class Investors

Another important aspect of investor trading behavior relates to firm size preferences. To examine whether the middle class in Turkey prefers to trade smaller or larger firms, we construct another five quintile portfolios based on market capitalization. The results show that middle class investors generally prefer to trade on smaller firms. Portfolios on stocks with smaller market capitalization present a higher MC/PR ratio. Specifically, the portfolio ranked as '1 Small' size presents a mean MC/PR ratio of 3.19, whereas for the '5 Big' size portfolio the mean MC/PR ratio is 2.52. The difference (-0.672) is also statistically significant.

4.3. Visibility Preferences of Middle Class Investors

One further common feature of investor behavior is the degree to which stocks with higher market visibility are generally preferred. Such stocks are normally followed by a higher number of professional analysts, who on a regular basis analyze the news releases and revise their forecasts and recommendations. A higher number of analysts following a firm suggests that its stock is of higher importance for professional portfolios and for a given industry. If the middle class prefers such companies, we can reasonably infer that they value professional opinions and are more likely to revise their portfolio choices based on analyst consensus, the recommendations of their favorite analyst, respective brokerage firm or bank. However, the results to this front are inconclusive, as there is no clear pattern between MC and PR portfolios, while the difference between low (2.74) and high (2.80) number of analysts is insignificant.

4.4. Glamour vs. Value Preferences of Middle Class Investors

Finally, we examine whether middle class investors in Turkey prefer to trade on high or low market-to-book (M/B) ratio companies. It is common in the finance literature that high M/B ratio proxies for growth-oriented, 'glamour' firms, whereas low M/B proxies for established 'value' firms (Fama and French, 1992). Similar to the volatility and size results, it appears that middle class traders differ from market professionals. They prefer to trade on established 'value' firms (rather than fast-growing and dynamic 'glamour' firms). Portfolios with smaller M/B present

with a higher mean MC/PR ratio. Specifically, the portfolio '1 Small' M/B presents a mean MC/PR ratio of 3.20, whereas the portfolio '5 Big' M/B has a mean MC/PR ratio of 2.48. This difference (-0.726) is statistically significant.

[Insert Table 4 here]

As a test of robustness to the previous findings in Table 5 we present average firm-specific characteristics (Volatility, Beta, Size, #Analyst, M/B) of quintile portfolios based on the MC/PR ratio. Low MC/PR ratio implies lower middle class trades relative to professional trades and high MC/PR ratio implies the opposite. Consistent with the previous results in Table 4, the volatility increases when moving from low middle class to high middle class trade levels (from 1 to 5 portfolios), confirming that middle class investors prefer lower risk assets (in contrast to professional investors that seem to favor higher risk stocks). The results show also a monotonic pattern for Size and M/B. Specifically, size and M/B decrease when moving from low middle class portfolios to high middle class ones (from 1 to 5 portfolios). This is consistent with previous findings that retail investors trade more on smaller and (established) value firms (Banz, 1981; Reinganum, 1981). The differences between the high and low MC/PR portfolios for volatility, size and M/B are statistically significant, as in the previous set of results.

[Insert Table 5 here]

4.5. The Performance of the Middle Class Traders

But what about *the 'crux of the matter'*, the impact of the middle class under these conditions, assuming the above trading patterns? And even more importantly, what about the lingering question in the minds of the middle-class scholars: "Can the rising power of the middle class possibly sway the direction of the market?" We address the above through a series of further econometric tests. As a first step we employ the ratio MC/PR as an exogenous factor in the traditional market model of stock returns for each of the 30 stocks in the BIST-30:

$$R_i = \alpha_i + \beta_{1i} \cdot R_m + \beta_{2i} \cdot MC/PR_i + \varepsilon_i,$$

where R_i are the daily returns of each stock *(i)*, R_m, the daily returns of the market index (XU030) and MC/PR_i the daily ratio of small over big trades for each stock (i). If the ratio MC/PR is associated with stock returns, the estimated coefficient β_{2i} of the factor will be flagged as significant, and will, depending on its sign, suggest whether its effect is positive or negative. To

estimate a single coefficient for each factor in the above model we employ a two-step procedure, similar to the one proposed by Fama and Macbeth (1973). As a first step, for each stock in our sample we run a cross-sectional regression and save the vector of each estimated coefficient; then, as the second step we obtain single coefficient estimates as the average of the first step coefficient estimates. For brevity, we do not report detailed results from the above procedure, but only the finally estimated equation coefficients, which confirm a significant negative contemporaneous relationship between middle class investment (*MC/PR*) and stock returns (R_i) for the BIST-30 index constituents[10]:

$$\begin{array}{lccc} R_i = & 0.548 & + 0.969 \cdot R_m & - 0.260 \cdot MC/PR \\ & [0.105] & [0.042] & [0.051] \\ & (5.236) & (22.929) & (-5.122) \end{array}$$

Therefore, middle class trades are associated with negative returns, a finding that suggests that when middle class investors trade heavily, the price of stocks they trade on drops.

However, the results of the above procedure reveal only part of the whole picture. To examine the causal nature of the relationship between share price returns and the ratio of Middle Class over Professional trades (MC/PR), we conduct a series of Granger causality tests (Granger, 1969). These tests, run separately for each security in the index during the period July – December 2013, aim to reveal whether there is a lead-lag relation between the values of the two examined time series. We thus investigate whether middle class trading activity in the BIST 'Granger-causes' stock returns or if it effectively 'chases' them. The Granger causality method involves simultaneously estimating the following two ordinary least squares equations for each of the 30 stocks in the BIST-30:

$$R_t = \alpha_0 + \sum_{i=1}^{5} a_i R_{t-1} + \sum_{j=1}^{5} \beta_j MC/PR_{t-j} + u_t$$

$$MC/PR_t = \gamma_0 + \sum_{j=1}^{5} \gamma_j MC/PR_{t-j} + \sum_{i=1}^{5} \delta_i R_{t-i} + v_t$$

[10] Standard Errors in [squared brackets], T-statistics in (brackets)

where, R_t and MC/PR_t are the time series of share price returns and the MC/PR ratio for each security accordingly, while R_{t-i} and MC/PR_{t-j} are their respected lags for up to five days, while u_t and v_t are random disturbance terms with a mean of zero.

The results of the above regressions and the respective F-tests are summarized in Table 6. For the first equation, the null hypothesis, that lagged MC/PR does not Granger-cause returns, is rejected in 23 and 16 cases (out of 30) at the 10% and the 5% significance levels respectively. The mean F-statistic across the 30 cases is 2.796 and significant at the 10% and the 5% levels. Therefore, middle class trading levels appear to influence stock returns negatively. On the other hand, the results of the second equation support that returns do not impact on middle class trading activity. In specific, the null (that lagged returns do not Granger-cause MC/PR) is rejected in just 5 and 4 cases at the 10% and the 5% significance levels respectively. The mean F-test score is 1.427 and insignificant.

[Insert Table 6 here]

To gain further insights into the true nature of the above relationship, we utilize impulse response analysis, which outlines the dynamic response of each variable in our system to shocks in the other variable (for a detailed illustration see Hodgson *et al.,* 2004). In our case, impulse response functions indicate the extent to which a shock of one variable (i.e. MC/PR) is transitory or persistent on the other (i.e. stock returns) and vice-versa. Figures 3a and 3b illustrate impulse response paths for both directions in the relationship between MC/PR and Ri. Specifically, we observe in Figure 3a that stock returns exhibit a negative response to positive shocks in middle class trading activity, which lasts for approximately 1-2 days. The opposite, however, is not true in Figure 3b: while responses of MC/PR to shocks in stock prices appear to be negative and last for 4-5 days, their magnitude is small and not significant. Therefore, we conclude that middle class trading levels impact (negatively) on share price returns, while share price returns do not appear to influence middle class activity. Hence, middle class trades in the ISE help shape share price returns, but do not appear to 'chase' them.

5. Discussion

Our main objective in this study was to draw attention to the relatively underexplored trading behavior of the middle class in emerging markets and contribute towards the development of a solid empirical view on the issue. We chose Turkey, as one of the most rapidly growing emerging economies, with a vibrant capital market, where domestic and foreign, individual and institutional investors trade over TL 3.25 billion ($1.50 billion) worth of equities on an average daily basis.

Our detailed examination of the market, its structure and its participants, revealed certain very interesting characteristics, allowing us to profile the average middle class investor in the Istanbul Stock Exchange. We found that middle class investors are predominant in the ISE and account for approximately 80 percent of the domestic individual market participants. However, in terms of market value, the middle class owns a relatively small fraction, which adds up to just over TL4.24 bn ($1.97 bn), yielding a mean portfolio value of just over TL4,800 ($2,230) for the average investor.

In addition, we saw that the middle class investors in Turkey typically reside in one of the large urban centers (Istanbul, Ankara, Izmir, etc.), close to the core of the economic, commercial and financial activity, as also observed by Rutz and Balkan (2010) and Tarim (2010). In effect, as financial intermediaries, educational institutions, services companies and professional activities cluster around the big urban areas, it is evident that the urbanization of the emerging economies and the appearance of a new "cosmopolitanism" in the big cities (Rutz & Balkan, 2010, p. 25) also attract retail investment activity. Furthermore, we found that, while the middle class is the biggest group across all age tiers, the typical age of the middle class stock market trader, accounting for over 50 percent of the active domestic traders in the ISE, is between 30 and 49 years.

Our empirical analysis of high-frequency data from the constituents of the BIST-30 index revealed that middle class trades are strongly associated with lower volatility equities, consistent with the risk aversion hypothesis. This finding is rather at odds with the empirical finance literature on western individual investors (for a review see Barber and Odean, 2011), which has

supported that on average retail investors prefer stocks with high idiosyncratic volatility. One explanation is that middle class traders in emerging countries cannot diversify as well as professionals or as their western world counterparts. Their funds are very limited and (as shown above) their mean portfolio value is a fraction of that of the US households in Barber and Odean's (2000) study. In addition, we appreciate that the two fairly recent market crashes of the ISE may have contributed to individuals becoming more risk aware, as posited by Tarim (2010). This could then suggest that in emerging markets, which are typically more prone to extreme price movements, middle class investors are exposed to more severe 'lessons' by the market, which may also shape their attitudes towards risk.

We also found that middle class trades in the ISE are associated with small capitalization stocks, among the BIST-30 'Blue Chips'. This finding indicates that middle class traders believe in the 'small firm effect', first empirically evidenced by Banz (1981) and Reinganum (1981), which posits that smaller size firms, typically characterized by higher growth opportunities, present better potential for future price appreciations. That middle class traders exhibit such a preference for small firms can be interpreted in two ways. Firstly, they are well-aware of the underlying theoretical reasoning, presumably as a result of training or advice by their brokers. Alternatively, one could argue that middle class traders have left the large capitalization market to the foreign investors and will only trade on large stocks if they envisage opportunities for short-term profit (Tarim, 2010).

Our next finding was that middle class trades cluster around low market-to-book (M/B) shares, otherwise known as 'value' shares, as opposed to high-growth, or 'glamour' shares. This preference is also in agreement with the presence of the so called 'value puzzle', which postulates that over the long term mature and established firms outperform the most popular high-growth firms. Again, explanations for this behavior can originate from the characteristics of the middle class portfolio and its small-size restrictions, but also from the role of financial advisors and brokers in instructing their clients to 'fly to quality' in periods of market distress.

Finally, we found that high middle class trades on a stock are generally associated with share price drops. Granger-causality tests revealed that middle class trades do not trail negative returns,

but rather appear to (Granger) cause them. This result reveals a hitherto uncharted aspect of the ISE. With around 80 percent of the market capitalization held by professional portfolios, invested in the long-term prospects of the Turkish economy, the market has become very sensitive to shifts in the order-flow, especially to the ratio of small over large trades. However, this finding needs to be interpreted with caution: On one hand, it can be attributed to the middle class acting as a vehicle, allowing professional portfolios to reshuffle their positions, when equities reach the desired price targets in the ISE. On the other hand, it could be that market responses are generally positive when large-size trades are relatively higher and professional traders are (re)positioned in the market, as also shown by Odean (1999) and Ülkü (2011). In any case, our results support that the balance between middle class and professional trades (MC/PR) indeed does matter and can sway the direction of the market.

That said, one cannot claim that the middle class wins or loses in this game. According to Tarim's (2010) observations, as the ISE has experienced growth over the past decade, middle class investors have been gaining their fair 'share of the pie', by trading between market lows and highs and by 'cashing out' on any small gains. This behavioral pattern also explains their short-term attitudes and propensity to trade too frequently. We therefore conclude that the ISE is a domain of 'harmonic coexistence' for middle class and professional investors, whereby the former provide the liquidity and the trading volume, necessary for market depth, and the latter offer the market strength and stability, necessary for a sustainable economic growth for Turkey.

6. Conclusions and Implications

The rising middle class in emerging markets and their phenomenally increasing spending capacity has ignited a discourse on how this newly-formed wealth will be allocated. In addressing such a question, one should be cognizant of the economic behavior of the proprietors of this new wealth. To this end, our study contributes to the discourse by providing insights into the trading patterns of the Turkish middle class, and offers valuable research and practical implications.

As in all studies, certain limitations could not be avoided. In specific, to proxy for middle class trades we employed a well-established measure by Barber et al (2009), yet we have had to make a certain number of assumptions. As such, in our study we assume that the majority of small trades are initiated by investors from the middle-income tier, without however matching specific trades to individuals' revenues. Although such an approach would ensure a perfect match of our proxy to middle class traders, it was not possible with the available databases, but would require proprietary (and highly confidential) information from a brokerage institute. Along the same lines, our research design does not allow us to draw inferences on the full demographic profile of the middle class traders, and the motivations for value generation and perceptions of risk (i.e. underlying motivations for investment, inclinations towards different types of investment, gender differences, etc.).

To gain a deeper understanding on the above issues, one would probably need to conduct in-depth research of a more qualitative nature. Future research on that front would fill in the gaps of our mapping exercise, advance our understanding on the economic behavior of middle class as investors, and provide the grounds for further generalization and theory development on the topic. The latter could be further facilitated with the testing of our premises in different emerging markets, whilst taking into consideration the idiosyncratic attributes of each country's middle class (culturally, institutionally, economically etc.). The rapidly emerging countries such as Brazil, Mexico, Chile, Russia, and of course the Eastern European block provide a most appropriate context for continuing this line of research.

From a practical viewpoint, the understanding of the investment (or trading) behavior of a class of individuals is of high importance in any market, especially in emerging ones that are being developed and integrated rapidly. For example, there are various advantages from knowing the market drivers (i.e. retailers vs. institutions) and their role on share price determination. This helps regulators to set rules and restrictions on accounting standards, investor protection, governance and market microstructure. Such rules are also critical for preventing stock market bubbles and possible arbitrage opportunities, caused by asymmetric information.

That high middle class trade ratios are followed by market declines is another important finding, relevant to emerging market participants and professionals. As it has been supported by empirical research, over-trading can have adverse wealth effects, especially in the presence of transaction costs, which can be rather high for retail investors. Particularly in Emerging Markets, regulators and 'watch-dogs' are now called to introduce investor protection and transparency directives so as to protect the middle-tier investors. In doing so, they will help preserve the market power of this ever-important group, which provides the necessary liquidity, but also supports listed firms with capital.

Tables and Figures

Table 1
The Identity of Middle Class Investors in the ISE in 2013

Panel A: Distribution of Investor Accounts in the ISE

Investor Identity	Investors		Market Value		Mean Portfolio Value (TL)
	Number	(%)	(TL bn)	(%)	
Domestic Individuals	1,095,162	98.6	36.95	18.9	33,740
Domestic Professionals	5,692	0.5	36.08	18.5	6,339,360
Foreign Individuals	5,950	0.5	0.50	0.3	84,088
Foreign Professionals	3,605	0.3	121.72	62.3	33,763,917
Total in BIST	1,110,409	100.0	195.25	100.0	175,839

Panel B: Distribution of Domestic Individual Investors by Portfolio Size

Portfolio Size (TL)	Investors		Market Value		Mean Portfolio Value (TL)
	Number	(%)	(TL bn)	(%)	
<1 (Inactive)	142,992	13.1	0.00	0.0	0
1 - 10.000	738,976	67.5	0.96	2.6	1,301
10.000 - 50.000	142,336	13.0	3.28	8.9	23,012
50.000 - 100.000	33,041	3.0	2.32	6.3	70,169
100.000 - 500.000	30,845	2.8	6.37	17.2	206,374
500.000 - 1.000.000	3,710	0.3	2.59	7.0	697,063
> 1.000.000	3,262	0.3	21.44	58.0	6,573,767
Total Dom. Indiv.	1,095,162	100.0	36.95	100.0	33,740

Panel C: Regional Distribution of Domestic Individual Investors: The top ten provinces

Province	Investors		Market Value		Mean Portfolio Value (TL)
	Number	(%)	(TL bn)	(%)	
1 İstanbul	344,568	31.5	22.74	61.5	65,982
2 Ankara	127,776	11.7	3.32	9.0	25,993
3 İzmir	103,444	9.4	2.17	5.9	21,014
4 Bursa	42,063	3.8	0.88	2.4	20,956
5 Antalya	32,248	2.9	0.56	1.5	17,436
6 Adana	26,531	2.4	0.52	1.4	19,470
7 Kocaeli	24,336	2.2	0.43	1.2	17,527
8 Konya	23,746	2.2	0.27	0.7	11,394
9 Balikesir	22,955	2.1	0.45	1.2	19,591
10 Mersin	18,417	1.7	0.34	0.9	18,340
Rest of Turkey	329,078	30.0	5.28	14.3	16,030
Total Dom. Indiv.	1,095,162	100.0	36.95	100.0	33,740

Source: Turkish Capital Markets Association -- MKK (www.mkk.com.tr)
$/TL = 2.1518

Table 2

Sample Description of the Constituents of the BIST-30 Index: Period July- December 2013

Ticker	Company Name	Market Cap ($) million[a]	Total Number of Trades	Average Trades/ Day	Average Volume/Trade	Average Share Price (₺)
AKBNK	Akbank TAS	12,455	470,850	4,571	5,193	7.31
ARCLK	Arcelik AS	3,815	172,895	1,679	1,036	11.85
ASELS	Aselsan Elektron.Sanayi Ve T	1,961	199,317	1,935	534	8.46
ASYAB	Asya Katilim Bankasi AS	606	143,032	1,389	6,690	1.84
BIMAS	BIM Birlesik Magazalar AS	6,123	218,439	2,121	340	42.48
DOHOL	Dogan Sirketler Grubu Hold.	820	84,944	825	11,521	0.84
EKGYO	Emlak Konut Gayrim.Yatiri	3,709	391,248	3,799	13,180	2.50
ENKAI	Enka Insaat ve Sanayi AS	8,953	173,737	1,687	1,772	5.90
EREGL	Eregli Demir ve Celik Fabr.	4,196	283,504	2,752	9,348	2.43
GARAN	Turkiye Garanti Bankasi AS	13,585	895,808	8,295	7,054	7.16
HALKB	Turkiye Halk Bankasi AS	7,058	619,022	6,010	3,841	14.38
IHLAS	Ihlas Holding AS	459	153,158	1,487	16,220	0.67
ISCTR	Turkiye Is Bankasi	9,724	626,894	6,086	7,105	5.11
KCHOL	KOC Holding AS	10,371	195,186	1,895	2,421	9.13
KOZAA	Koza Anadolu Metal Mad.	1,021	341,655	3,317	2,786	3.47
KOZAL	Koza Altin Isletmeleri AS	3,047	275,229	2,672	325	29.79
KRDMD	Kardemir Karabuk Demir Cel.	520	280,378	2,722	10,713	1.17
MGROS	Migros Ticaret AS	1,324	123,194	1,196	716	17.66
PETKM	Petkim Petrokimya Holding	1,269	179,037	1,738	6,575	2.90
PGSUS	Pegasus Hava Tasimaciligi	1,725	325,019	3,156	426	34.64
SAHOL	Haci Omer Sabanci Holding	8,193	243,009	2,359	2,874	9.30
SISE	Turkiye Sise ve Cam Fabr.	1,986	133,494	1,296	3,648	2.79
TAVHL	TAV Havalimanlari Holding	2,608	161,087	1,564	707	13.76
TCELL	Turkcell Iletisim Hizmetleri	11,604	184,245	1,789	3,101	11.76
THYAO	Turk Hava Yollari	4,130	804,852	7,452	2,880	6.82
TOASO	Tofas Turk Otomobil Fabr.	3,114	152,720	1,483	869	12.55
TTKOM	Turk Telekomunikasyon AS	9,694	167,152	1,623	1,792	6.59
TUPRS	Tupras Turkiye Petrol Rafineri	4,993	215,271	2,090	422	43.04
VAKBN	Turkiye Vakiflar Bankasi Tao	4,438	466,332	4,527	7,077	4.45
YKBNK	Yapi ve Kredi Bankasi AS	7,515	427,643	4,152	6,823	4.32
Total		151,016	9,108,351	84,337	-	-
Mean		5,034	303,612	2,922	4,600	-
Min		459	84,944	825	325	-
Max		13,585	895,808	8,295	16,220	-

Notes:

[a] Market Capitalization on 31/12/2013 / $/TL : 2.1518

Table 3
Summary Statistics of Main Variables

	BIST-30			BIST-100		
	Mean	Median	Variance	Mean	Median	Variance
Returns	-0.051	-0.028	6.810	-0.056	-0.027	6.768
MC/PR	2.904	2.458	6.932	3.408	3.240	7.870
Beta	0.971	0.973	0.005	0.862	0.867	0.012
Volatility	26.955	26.997	7.084	27.087	26.903	13.022
Size	11.563	11.553	2.496	4.540	4.540	0.803
#Analyst	23.774	23.900	0.999	12.816	12.878	0.655
M/B	2.448	2.449	0.146	1.848	2.040	6.467

This table shows summary statistics of main variables: Stock returns, the number of middle class to the number of professional trades (MC/PR), stock volatility, stock beta calculated over one year CAPM, size (market capitalization), the number of analysts following, market-to-book ratio (M/B). BIST-30 (BIST-100) provides summary statistics for firms traded on BIST-30 (BIST-100).

Table 4
Middle Class (MC) to Professional (PR) Trades

	Sort variable				
	Volatility	Beta	Size	#Analyst	M/B
1 Low	2.794	2.621	3.198	2.743	3.206
2	2.864	2.782	2.968	3.449	2.914
3	2.676	2.681	2.584	1.825	2.650
4	2.656	2.596	2.415	3.997	2.415
5 High	2.408	2.701	2.526	2.806	2.480
DIF(High-Low)	-0.386**	0.080	-0.672***	-0.060	-0.726***
t-test difference	-2.543	0.420	-3.042	-0.418	-3.504

This table shows the ratio of the number of Middle Class trades to the number of Professional trades (MC/PR) in quintile portfolios constructed based on following stock characteristics: the a) stock volatility, b) beta calculated over one year CAPM, c) size, d) number of analysts following, and e) market-to-book ratio (M/B). DIF(High-Low) is the difference in the means between the high and low portfolio. The t-test difference is a test for whether the change in DIF(High-Low) is significant. **, *** denote significance at 5 and 1 percent respectively.

Table 5
Quintile Portfolios based on MC/PR ratio

	Volatility	Beta	Size	#Analyst	M/B
1 Low MC/PR	27.57	0.968	11.796	23.760	2.518
2	27.26	0.969	11.685	23.823	2.486
3	26.77	0.973	11.581	23.770	2.435
4	26.70	0.975	11.545	23.758	2.420
5 High MC/PR	26.43	0.972	11.277	23.734	2.392
DIF(High-Low)	-1.139***	0.005	-0.519***	-0.025	-0.126***
t-test difference	-2.874	0.409	-5.127	-0.224	-3.817

This table shows average stock characteristics of quintile portfolios constructed based on the MC/PR ratio. Low MC/PR ratio implies lower middle class trades relative to professional trades. High MC/PR ratio implies higher middle class trades relative to professional trades. DIF(High-Low) is the average difference between the high and low portfolio. The t-test difference is a test for whether the change in DIF(High-Low) is significant.
*** denotes significance at 5 and 1 percent respectively.

Table 6
Granger Causality Tests between Middle Class Investment and Stock Returns

Independent Variable		Dependent Variable	Number of firms with significant Fs		Mean F-statistic	z-statistic for significant Fs	
			at 10%	at 5%		at 10%	at 5%
MC/PR ratio	→	Ri (Returns)	23/30	16/30	2.796	2.704***	1.672*
						[0.006]	[0.053]
Ri (Returns)	→	MC/PR ratio	5/30	4/30	1.427	-3.471	-5.061
						[0.999]	[1.000]

*, *** denote significance at 10 and 1 percent respectively.

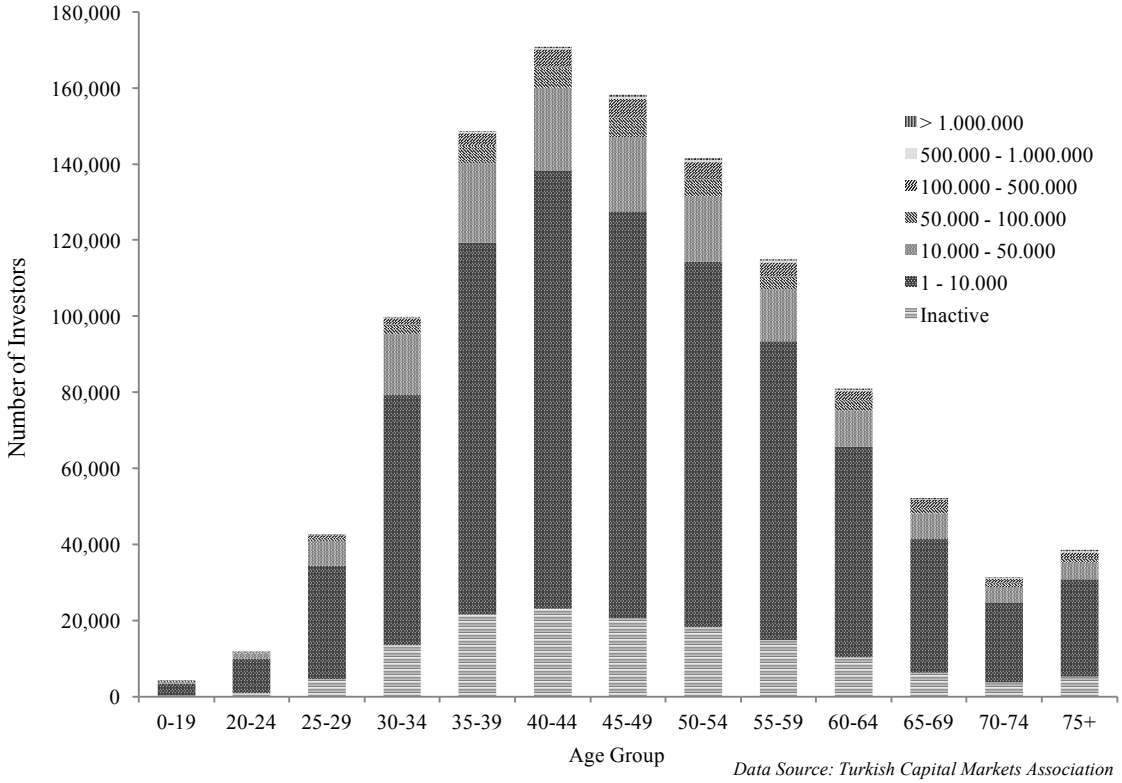

Fig.1 Distribution of Domestic Investors by Age Group and Portfolio Size (TL)

Fig. 2 BIST-30 Index Price and Traded Volume (July- December 2013)

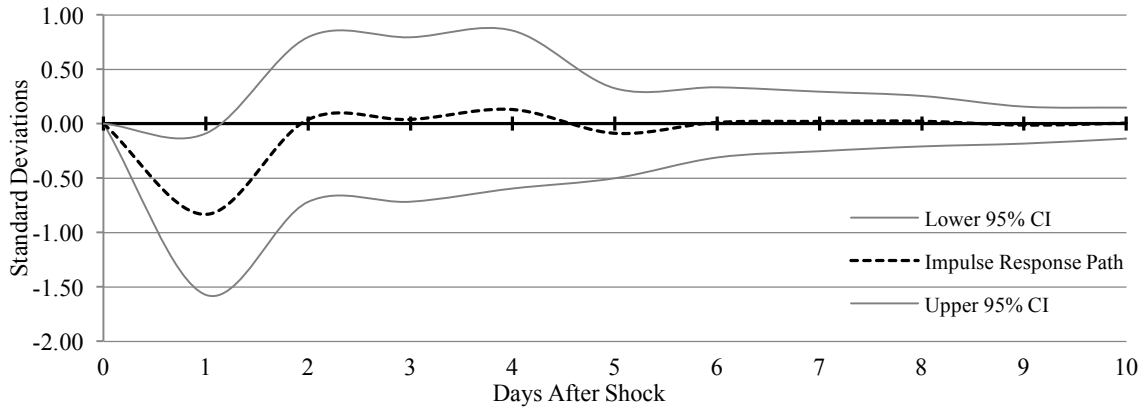

Fig. 3a Mean Impulse Responses of Ri from a one-Standard Deviation Shock to MC/PR

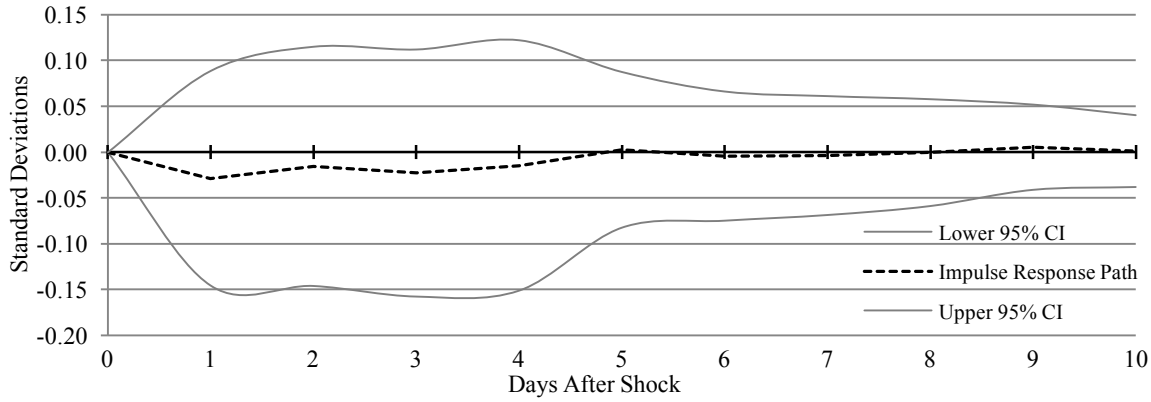

Fig. 3b Mean Impulse Responses of MC/PR from a one-Standard Deviation Shock to Ri

References

Ali, A., S. Klasa & O. Li (2008), Institutional stake holding and better informed traders at earnings announcements, *Journal of Accounting and Economics, 46(1),* 47-61.

Banerjee, A. V., & Duflo, E. (2008). What is middle class about the middle classes around the world? *The journal of Economic Perspectives: A journal of the American Economic Association, 22(2),* 3.

Banz, R. W. (1981). The relationship between return and market value of common stocks. *Journal of Financial Economics*, 9(1), 3-18.

Barber, B.M. Odean T., & Zhu, N. (2009). Do retail trades move markets?, *The Review of Financial Studies*, *22(1),* 151-186.

Barber, B.M., & Odean T., (2000), Trading is hazardous to your wealth: The common stock investment performance of individual investors, *The Journal of Finance*, *55(2),* 773-806.

Barber, B. M., & Odean, T. (2011). The behavior of individual investors. *Handbook of the Economics of Finance*, 2, 1533-1570.

Birdsall, N. (2010). The (indispensable) middle class in developing countries; or, the rich and the rest, not the poor and the rest. *EQUITY IN A GLOBALIZING WORLD, Ravi Kanbur and Michael Spence, eds., World Bank, Forthcoming*.

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), Handbook of theory and research for the sociology of education: 241-258. New York: Greenwood

Burris, V. (1980). Capital accumulation and the rise of the new middle class. *Review of Radical Political Economics, 12(1)*, 17-34.

Cavusgil, S. T., Civi, E., Tutek, H. H., & Dalgic, T. (2003). Turkey. *Thunderbird International Business Review, 45(4)*, 467-479.

Central Intelligence Agency, 2014. The World Factbook: Turkey. Retrieved June 6, 2014, from https://www.cia.gov/library/publications/the-world-factbook/geos/tu.html

Chen, G., Kim, K.A., Nofsinger, J.R., & Rui, O.M. (2007). Trading performance, disposition effect, overconfidence, representativeness bias, and experience of emerging market investors. *Journal of Behavioral Decision Making*, 20(4), 425-451

Corneo, G., & Jeanne, O. (1997). Conspicuous consumption, snobbism and conformism. *Journal of Public Economics, 66(1),* 55-71.

Dawar, N. & Chattopadhyay, A. (2002). Rethinking marketing programs for emerging markets. *Long Range Planning, 35*, 457-474.

Diyarbakirlioglu, E. (2011). Foreign equity flows and the "Size Bias": Evidence from an emerging stock market. *Emerging Markets Review, 12(4),* 485-509.

Easterly, W. (2001). The middle class consensus and economic development. *Journal of economic growth, 6(4)*, 317-335.

Eisenhauer, J. G. (2011). The rich, the poor, and the middle class: Thresholds and intensity indices. *Research in Economics, 65(4)*, 294-304.

Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, 47(2), 427-465.

Fama, E. F., & MacBeth, J. D. (1973). Risk, return, and equilibrium: Empirical tests. The *Journal of Political Economy*, 607-636.

Farrell, D., Gersch, U. A., & Stephenson, E. (2006). The value of China's emerging middle class. *McKinsey Quarterly, 2(1)*, 60.

Ferreira, F. H., Messina, J., Rigolini, J., López-Calva, L.-F., Lugo, M. A., Vakis, R., & Ló, L. F. (2012). *Economic Mobility and the Rise of the Latin American Middle Class*: World bank publications.

Granger, C. W. J. (1969). Investigating causal relations by econometric models and cross-spectral methods, *Econometrica, 37*, 424-438.

Hodgson, A., Masih, A. M. M., & Masih, R. (2006). Futures trading volume as a determinant of prices in different momentum phases, *International Review of Financial Analysis, 15(1),* 68-85.

Kharas, H. (2010). *The emerging middle class in developing countries*: OECD Development Centre Paris.

Kravets, O., & Sandikci, O. (2014). Competently Ordinary: New Middle Class Consumers in the Emerging Markets. *Journal of Marketing*, 78, 125-140.

Kumar, A., & Lee, C. (2006). Retail investor sentiment and return comovements. *The Journal of Finance, 61(5),* 2451-2486.

Lakonishok, J., Shleifer, A., & Vishny R., W. (1992). The impact of institutional trading on stock prices, *Journal of Financial Economics, 32(1),* 23-34.

Lee, C., & Radhakrishna, B. (2000), Inferring investor behaviour: Evidence from TORQ data, *Journal of Financial Markets*, *3(2),* 183-204.

Mason, R., S., Hamilton, D., & Tilman, R. (1983). Conspicuous Consumption: A Study of Exceptional Consumer Behavior (Book). *Journal of Economic Issues (Association for Evolutionary Economics)*, 17, 791-799.

Murphy, K., M., Shleifer, A., & Vishny, W., R. (1989). Income distribution, market size, and industrialization. *The Quarterly Journal of Economics, 104(3)*, 537-564.

Nofsinger, J., R. & Sias, R., W. (1999). Herding and feedback trading by institutional and individual investors. *The Journal of Finance*, 54(6), 2263-2295.

Odean, T. (1999). Do investors trade too much? American Economic Review, 1279-1298.

Prahalad, C. K., & Lieberthal, K. (1998). The end of corporate imperialism. Harvard Business Review, 76, 68-79.

Pressman, S. (2007). The decline of the middle class: an international perspective. *Journal of Economic Issues*, 181-200.

Ravallion, M. (2010). The developing world's bulging (but vulnerable) middle class. *World Development, 38(4),* 445-454.

Raynor, J. M. (1969). *The Middle Class*: Longmans.

Reinganum, M. R. (1981). Misspecification of capital asset pricing: Empirical anomalies based on earnings' yields and market values. *Journal of Financial Economics*, 9(1), 19-46.

Rutz, H., & Balkan, E., M. (2013). *Reproducing class: Education, neoliberalism, and the rise of the new middle class in Istanbul*: Berghahn Books.

Scharfstein, D., S., & Stein, J., C. (1990). Herd behaviour and investment, *American Economic Review*, *80(3),* 465-479. Cavusgil, S. T. (1997). Measuring the potential of emerging markets: An indexing approach. *Business Horizons, 40*, 87-91.

Schor, J. (2000). The new politics of consumption. Do Americans shop too much, 3-33.

Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers too long: Theory and evidence. *The Journal of Finance*, 40(3), 777-790.
Shleifer, A. (1986). Do demand curves for stocks slope down? *The Journal of Finance*, *41(3),* 579-590.
Shleifer, A., & Summers, L. (1990). The noise trader approach to finance, *Journal of Economic Perspectives, 4(2),* 19-33.
Tarim, E. (2010). Two Waves of Globalization in the Istanbul Stock Exchange since 1985 and the Evolution of the Domestic Retail Investor. *Competition & Change*, 14(3-4): 343-362.
Tatoglu, E., & Glaister, K. W. (1998a). Determinants of foreign direct investment in Turkey. *Thunderbird International Business Review, 40(3),* 279-314.
Tatoglu, E., & Glaister, K. W. (1998b). Performance of international joint ventures in Turkey: perspectives of Western firms and Turkish firms. *International Business Review, 7(6),* 635-656.
Ülkü, N. (2011). "Big players' aggregated trading and market returns in Istanbul Stock Exchange." *Applied Financial Economics* 22(6): 491-508.
Ülkü, N., & İkizlerli, D. (2012). The interaction between foreigners' trading and emerging stock returns: Evidence from Turkey. *Emerging Markets Review,* 1*3(3),* 381-409.
Veblen, T. (2007). *The Theory of the Leisure Class*. Oxford University Press.
Vigneron, F., & Johnson, L. W. (1999). A review and a conceptual framework of prestige-seeking consumer behavior. *Academy of Marketing Science Review*, *1(1),* 1-15.